	PA-IDC	
QUERY CONTROL FORM	RTIS USE ONLY	
Application No. 09/779, 373 Prepa	pared by S.C. Tracking Number 06005385	_
Examiner-GAU Budd M-2834 Date		
No. o	of queries / IFW (IWT?)	

JACKET				
a. Serial No.	f. Foreign Priority	k. Print Claim(s)	PTO-1449	
b. Applicant(s)	g. Disclaimer	I. Print Fig.	q. PTOL-85b	
c. Continuing Data	h. Microfiche Appendix	m. Searched Column	r. Abstract	
d. PCT	i. Title	n. PTO-270/328	s. Sheets/Figs	
e. Domestic Priority	j. Claims Allowed	o. PTO-892	t. Other	

	oither
SPECIFICATION	MESSAGE PTO-1449 & Please, initial or strike through
a. Page Missing	selecences cited on PTO-1449 from dated 08-09-2001
b. Text Continuity	(sheets 2 through 11 of 11) Gay provided for reference.
c. Holes through Data	
d. Other Missing Text	
e. Illegible Text	
f. Duplicate Text	
g. Brief Description	
h. Sequence Listing	
i. Appendix	:
j. Amendments	
k. Other	
CLAIMS	
a. Claim(s) Missing	
b. Improper Dependency	
c. Duplicate Numbers	Thank You
d. Incorrect Numbering	initials_ffC
e. Index Disagrees	RESPONSE
f. Punctuation	
g. Amendments	
h. Bracketing	
i. Missing Text	
j. Duplicate Text	
k. Other	
	initials

Form 1449 (Modified)			Atty-Docket No.	Application No.:
\downarrow	Information Disclosure		SRI1P029 Applicant:	09/779,373
Cie	Statement By Applicant		Pelrine, et al.	

Filing Date Group 道(Use Several Sheets if Necessary) 02/07/01 2834

ADER		Other Documents		
Examiner				
Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication		
	X	Aramaki, S., S. Kaneko, K. Arai, Y. Takahashi, H. Adachi, and K.		
		Yanagisawa. 1995. "Tube Type Micro Manipulator Using Shape Memory		
		Alloy (SMA)," Proceedings of the IEEE Sixth International Symposium on		
		Micro Machine and Human Science, Nagoya, Japan, pp. 115-120.		
	Y	Ashley, S., "Smart Skis and Other Adaptive Structures", Mechanical		
		Engineering, November 1995, pp. 77-81		
	Z	Bar-Cohen, Yoseph, JPL, WorldWide ElectroActive Polymers, EAP (Artificial		
		Muscles) Newsletter, Vol. 1, No. 1, June 1999.		
	A1	Bar-Cohen, Yoseph, JPL, WorldWide ElectroActive Polymers, EAP (Artificial		
		Muscles) Newsletter, Vol. 1, No. 2, December 1999.		
	A2	Bar-Cohen, Yoseph, JPL, WorldWide ElectroActive Polymers, EAP (Artificial		
		Muscles) Newsletter, Vol. 2, No. 1, July 2000.		
	A3	Bar-Cohen, Yoseph, JPL, WorldWide ElectroActive Polymers, EAP (Artificial		
		Muscles) Newsletter, Vol. 2, No. 2, December 2000.		
	A4	Bar-Cohen, Yoseph, JPL, WorldWide ElectroActive Polymers, EAP (Artificial		
	_	Muscles) Newsletter, Vol. 3, No.1, June 2001.		
	A5	Bar-Cohen, Yoseph, JPL, WorldWide Electroactive Polymer Actuators		
	· ·	Webhub webpages 1-7, http://ndeaa.jpl.nasa.gov/nasa-nde/lommas/eap/EAP-		
	<u> </u>	web.htm, downloaded July 23, 2001.		
	A6	Baughman, R., L. Shacklette, R. Elsenbaumer, E. Plichta, and C. Becht		
		"Conducting Polymer Electromechanical Actuators," Conjugated Polymeric		
		Materials: Opportunities in Electronics, Optoelectronics and Molecular		
		Electronics, eds. J.L. Bredas and R.R. Chance, Kluwer Academic Publishers,		
		The Netherlands, pp. 559-582, 1990		
	A7	Baughman, R.H., L.W. Shacklette, and R.L. Elsenbaumer, E.J. Plichta, and C.		
		Becht, "Micro electromechanical actuators based on conducting polymers", in		
	1	Molecular Electronics, Materials and Methods, P.I. Lazarev (ed.), Kluwer		
	<u> </u>	Academic Publishers, pp. 267-289 (1991)		
	A8	Bharti, V., Y. Ye, TB. Xu and Q. M. Zhang, "Correlation Between Large		
	1	Electrostrictive Strain and Relaxor Behavior with Structural Changes Induced		
}		in P(VDF-TrFE) Copolymer by electron Irradiation," Mat. Res. Soc. Symp.		
	<u> </u>	Proc. Vol 541, pp. 653-659 (1999).		
	A9	Bharti, V., ZY. Cheng, S. Gross, TB. Xu, and Q. M. Zhang, "High		
		electrostrictive strain under high mechanical stress in electron-irradiated		
		poly(vinylidene fluoride-trifluoroethylene) copolymer," Appl. Phys. Lett. Vol.		
	<u></u>	75, 2653-2655 (October 25, 1999).		
Examiner		Date Considered		

Form 1449 (Modified)	· Atty Docket No. SRI1P029	Application No.: 09/779,373
Information Disclosure Statement By Applicant	Applicant: Pelrine, et al.	•
(Ese Several Sheets if Necessary)	Filing Date	Group
(E) e Several Sheets if Necessary)	02/07/01	2834

		Other Documents		
Examiner	,,			
THITTAL	No.			
	B1	Bharti, V., H. S. Xu, G. Shanthi, and Q. M. Zhang, "Polarization and		
		Structural Properties of High Energy Electron Irradiated Poly(vinylidene		
		fluoride-trifluoroethylene) Copolymer Films," to be published in J. Appl.		
		Phys. (2000).		
	B2	Bharti, V., XZ. Zhao, Q. M. Zhang, T. Romotowski, F. Tito, and R. Ting,		
		"Ultrahigh Field Induced Strain And Polarization Response In Electron		
		Irradiated Poly(Vinylidene Fluoride-Trifluoroethylene) Copolymer," Mat.		
		Res. Innovat. Vol. 2, 57-63 (1998).		
	B3	Bobbio, S., M Kellam, B. Dudley, S. Goodwin Johansson, S. Jones, J.		
		Jacobson, F. Tranjan, and T. DuBois, "Integrated Force Arrays," in Proc. IEEE		
		Micro ElectroMechanical Systems Workshop, Fort Lauderdale, Florida		
		February 1993.		
	B4	Bohon, K., and S. Krause, "An Electrorheological Fluid and Siloxane Gel		
		Based Electromechanical Actuator: Working Toward an Artificial Muscle,"		
		to be published in J. Polymer Sci., Part B. Polymer Phys. (2000)		
	B5	Brock, D. L., "Review of Artificial Muscle based on Contractile Polymers,"		
		MIT Artificial Intelligence Laboratory, A.I. Memo No. 1330, Nov. 1991.		
	B6	Caldwell, D., G. Medrano-Cerda, and M. Goodwin, "Characteristics and		
		Adaptive Control of Pneumatic Muscle Actuators for a Robotic Elbow," Proc.		
		IEEE Int. Conference on Robotics and Automation, San Diego, California (8-		
		13 May 1994).		
	B7	Calvert, P. and Z. Liu, "Electrically stimulated bilayer hydrogels as muscles,"		
		Proceedings of the SPIE International Symposium on Smart Structures and		
		Materials: Electro-Active Polymer Actuators and Devices, March 1-2, 1999,		
		Newport Beach, California, USA, pp. 236-241.		
	B8	Cheng, ZY., H. S. Xu, J. Su, Q. M. Zhjang, PC. Wang, and A. G.		
		MacDiarmid, "High performance of all-polymer electrostrictive systems,"		
		Proceedings of the SPIE International Symposium on Smart Structures and		
		Materials: Electro-Active Polymer Actuators and Devices, March 1-2, 1999,		
		Newport Beach, California, USA., pp. 140-148.		
	B9	Cheng, ZY., TB. Xu, V. Bharti, S. Wang, and Q. M. Zhang, "Transverse		
		Strain Responses In The Electrostrictive Poly(Vinylidene Fluoride-		
		Trifluorethylene) Copolymer," Appl. Phys. Lett. Vol 74, No. 13, pp. 1901-		
· 		1903, March 29, 1999.		
	B10			
		Properties of Electrochemically Driven Polypyrrole Free-standing Films,"		
		Journal of Intelligent Material Systems and Structures, Vol. 6, pp. 32-37,		
		January 1995		
Examiner		Date Considered		

Form 1449 (Modified) Information Disclosure	Atty Docket No. SRI1P029 Applicant:	Application No.: 09/779,373
Statement By Applicant Statement By Applicant Statement By Applicant Statement By Applicant	Pelrine, et al. Filing Date 02/07/01	Group 2834

		Other Documents	
Examiner			
1 Mittal	No.	Author, Title, Date, Place (e.g. Journal) of Publication	
	C1	De Rossi, D., and P. Chiarelli. 1994. "Biomimetic Macromolecular	
		Actuators," Macro-Ion Characterization, American Chemical Society	
		Symposium Series, Vol. 548, Ch. 40, pp. 517-530.	
	C2	Dowling, K., Beyond Faraday-Non Traditional Actuation, available on the	
		World Wide Web at http://www.frc.ri.cmu.edu/~nivek/OTH/beyond-	
		faraday/beyondfaraday.html, 9 pages, 1994	
J	C3	Egawa, S. and T. Higuchi, "Multi-Layered Electrostatic Film Actuator," Proc.	
		IEEE Micro Electra Mechanical Systems, Napa Valley, California, pp. 166-	
		1171 (February 11-14, 1990).	
	C4	Elhami, K., and B. Gauthier-Manuel, "Electrostriction Of The Copolymer Of	
		Vinylidene-Fluoride And Influoroethylene," J. Appl. Phys. Vol. 77 (8), 3987-	
		3990, April 15, 1995.	
	C5	Flynn, Anita M., L.S. Tavrow, S.F. Bart, R.A. Brooks, D.J. Ehrlich, K.R.	
		Udayakumar, and L.E. Cross. 1992. "Piezoelectric Micromotors for	
		Microrobots," IEEE Journal of Microelectromechanical Systems, Vol.1, No.1,	
		pp. 44-51 (March 1992); also published as MIT Al Laboratory Memo 1269.	
	4	Massachusetts Institute of Technology (February 1991).	
	C6		
		Frogs To Flies," Proceedings of the 7th SPIE Symposium on Smart Structures	
	1	and Materials-Electroactive Polymers and Devices (EAPAD) Conference,	
		March 6-8, 2000, Newport Beach, California, USA, pp. 2-9.	
	C7.		
	1	Microactuators," Solid State Sensors and Actuators, 1991, Digest of Tech.	
	+	Papers, Transducers, pp. 1056-1059	
	C8	Furukawa, T., and N. Seo., "Electrostriction as the Origin of Piezoelectricity in	
		Ferroelectric Polymers," Japanese J. Applied Physics, Vol. 29, No. 4, pp. 675-	
<u> </u>		680 (April 1990).	
	C9	Gilbertson, R.G., and J.D. Busch. 1994. "Survey of Micro-Actuator	
		Technologies for Future Spacecraft Missions," presented at the conference	
		entitled "Practical Robotic Interstellar Flight: Are We Ready?" New York	
	1	University and The United Nations, New York. (August 29 and September 1,	
		1994); also published on the World Wide Web at	
		http://nonothinc.com/nanosci/microtech/mems/ten-actuators/gilbertson.html.	
	C10	I STATE OF THE PARTITION OF THE PROPERTY OF TH	
		Applications, Electronic Design, February 6, 1995, pages 34 and 36	
Examiner	<u></u>	Date Considered	

Form 1449	(Modified)
-----------	------------

Atty Docket No. **SRI1P029**

Application No.: 09/779,373

Information Disclosure Statement By Applicant Applicant: Pelrine, et al.

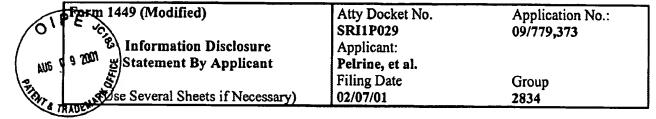
Group

2834

(Use Several Sheets if Necessary)

Filing Date 02/07/01

MAI		Other Documents		
Examiner				
Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication		
	D1	M. Greene and J. A. Willett, and Kornbluh, R., "Robotic systems," in ONR Report 32198-2, Ocean Engineering and Marine Systems 1997 Program (Dec.		
		1997)		
	D2	Heydt, R., R. Pelrine, J. Joseph, J. Eckerle, and R. Kornbluh. "Acoustical Performance of an Electrostrictive Polymer Film Loudspeaker", <i>Journal of the Acoustical Society of America</i> Vol. 107, pp. 833-839 (Feb. 2000).		
	D3	Heydt, R., R. Kombluh, R. Pelrine, and B. Mason, "Design and Performance of an Electrostrictive Polymer Film Acoustic Actuator", <i>Journal of Sound and Vibration</i> (1998)215(2), 297-311.		
	D4	Hirano, M., K. Yanagisawa, H. Kuwano, and S. Nakano, "Microvalve with Ultra-low Leakage," Tenth Annual International Workshop on Micro Electromechanical Systems, Nagoya, Japan, <i>IEEE Proceedings</i> (January 26-30, 1997), pp. 323-326.		
	D5	Hirose, S., Biologically Inspired Robots: Snake-like Locomotors and Manipulators, "Development of the ACM as a Manipulator", Oxford University Press, New York, 1993, pp.170-172. Hunter, I., S. Lafontaine, J. Hollerbach, and P. Hunter, "Fast Reversible NiTi Fibers for Use in MicroRobotics," Proc. 1991 IEEE Micro Electro Mechanical Systems-MEMS '91, Nara, Japan, pp.166-170.		
	D6			
	D7	Hunter, I.W., and S. Lafontaine, "A Comparison of Muscle with Artificial Actuators", Technical Digest of the IEEE Solid-state Sensor and Actuator Workshop, Hilton Head, South Carolina, June 22-25, 1992, pp.178-185.		
	D8	Jacobsen, S., Price, R., Wood, J, Rytting, T., and Rafaelof, M., "A Design Overview of an Eccentric-Motion Electrostatic Microactuator (the Wobble Motor)", Sensors and Actuators, 20 (1989) pages 1-16		
	D9	Kaneto, K., M. Kaneko, Y. Min, and A.G. MacDiarmid. 1995. "Artificial Muscle': Electromechanical Actuators Using Polyaniline Films," Synthetic Metals 71, pp. 2211-2212, 1995		
	D10	Kawamura, S., K. Minani, and M. Esashi, "Fundamental Research of Distributed Electrostatic Micro Actuator," Technical Digest of the 11th Sensor Symposium, pp. 27-30(1992).		
	D11	Kondoh Y., and T. Ono. 1991. "Bimorph Type Actuators using Lead Zinc Niobate-based Ceramics," <i>Japanese Journal of Applied Physics</i> , Vol. 30, No. 9B, pp. 2260-2263, September 1991.		
	D12	Kombluh, R., R. Pelrine, R. Heydt, and Q. Pei, "Acoustic Actuators Based on the Field-Activated Deformation of Dielectric Elastomers," (2000)		
Examiner		Date Considered		



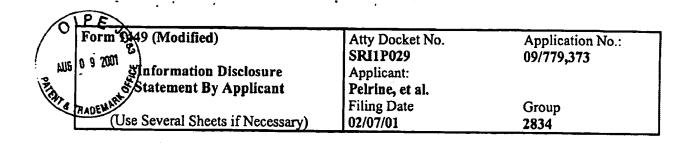
Other Documents				
Examiner	·			
Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication		
	E1		nd J. Eckerle, "Artificial Muscle: The Next	
			ators," presented at the Fourth World Conference	
			Paper M591-331, Pittsburgh, PA, September 17-	
		19, 1991.		
	E2	Kornbluh, R., R. Pelrine, J.	Joseph, "Elastomeric Dielectric Artificial Muscle	
		Actuators for Small Robots	" Proceedings of the Third IASTED International	
			Manufacturing, June 14-16, 1995, Cancun,	
		Mexico.		
	E3	Kombluh, R., Pelrine, R., E	ckerie, J., Joseph, J., "Electrostrictive Polymer	
		Artificial Muscle Actuators	", IEEE International Conference on Robotics and	
	-	Automation, Leuven, Belgi		
	E4	Kornbluh, R., R. Peirine, Jo	se Joseph, Richard Heydt, Qibing Pei, Seiki Chiba,	
		1999. "High-Field Electrost	riction Of Elastomeric Polymer Dielectrics For	
	i	Actuation", Proceedings of	the SPIE International Symposium on Smart	
		March 1 2 1000 Name + 1	ectro-Active Polymer Actuators and Devices,	
	E5	Warch 1-2, 1999, Newport I	Beach, California, USA. pp. 149-161.	
	E3	Kombiun, R. D and R. E. Po	elrine., "Dexterous Multiarticulated Manipulator	
		with Electrostrictive Polymer Artificial Muscle," ITAD-7247-QR-96-175, SRI Project Number 7247, Prepared for: Office of Naval Research, November		
		1996		
	E6	Kornbluh, R., R. Pelrine, Q. Pei, S. Oh, and J. Joseph, 2000. "Ultrahigh Strain		
		Response of Field-Actuated Elastomeric Polymers," Proceedings of the 7th		
		SPIE Symposium on Smart Structures and Materials-Electroactive Polymers		
		and Devices (EAPAD) Conference, March 6-8, 2000, Newport Beach,		
		California, USA, pp. 51-64.		
	E7		seph, J., Pei, Q. and Chiba, S., "Ultra-High Strain	
		Response of Elastomeric Polymer Dielectrics", Proc. Materials Res. Soc.,		
		Fall meeting, Boston, MA, pages 1-12, December 1999		
	E8	Ktech's PVDF Sensors, http://www.ktech.com/pvdf.htm, 06/06/2001, pp. 1-5.		
	E9	Lang, J, M. Schlect, and R. Howe, "Electric Micromotors: Electromechanical		
		Characteristics," Proc. IEEE Micro Robots and Teleoperators Workshop,		
		Hyannis, Massachusetts (November 9-11, 1987).		
	E10	Liu, Y., T. Zeng, Y.X. Wang	g, H. Yu, and R. Claus, "Self-Assembled Flexible	
		Electrodes on Electroactive	Polymer Actuators," Proceedings of the SPIE	
		International Symposium on	Smart Structures and Materials: Electro-Active	
		Polymer Actuators and Devices, March 1-2, 1999, Newport Beach, California,		
<u> </u>	USA., pp. 284-288.			
Examiner			Date Considered	

Form 1449 (Modified) Information Disclosure	Atty Docket No. SRI1P029 Applicant:	Application No.: 09/779,373
Statement By Applicant See Several Sheets if Necessary)	Pelrine, et al. Filing Date 02/07/01	Group 2834

No.	1 Total Control Contro			
	1 Total Control Contro			
· Fl				
	Liu, C., Y. Bar-Cohen, and S. Leary, "Electro-statically stricted polymers			
	(ESSP)," Proceedings of the SPIE International Symposium on Smart			
	Structures and Materials: Electro-Active Polymer Actuators and Devices,			
	March 1-2, 1999, Newport Beach, California, USA., pp. 186-190.			
F2	Lawless, W. and R. Arenz, "Miniature Solid-state Gas Compressor," Rev. Sci			
	Instrum., 58(8), pp.1487-1493, August 1987			
F3	Martin, J. and R. Anderson, 1999. "Electrostriction In Field-Structured			
	Composites: Basis For A Fast Artificial Muscle?", Journal of Chemical			
	Physics, Vol. 111, no. 9, pp.4273-4280, September 1, 1999			
F4	Measurements Specialties, Inc Piezo Home,			
http://www.msiusa.com/piezo/index.htm, 06/06/2001				
F5	T. B. Nguyen, C. K. DeBolt, Shastri, S. V., and A. Mann, "Advanced Robotic			
	Search," in ONR Ocean, Atmosphere, and Space Fiscal Year 1999 Annual			
	Reports (Dec. 1999)			
F6 Nguyen, T., J. A. Willett and Kornbluh, R., "Robotic systems," in O Ocean, Atmosphere, and Space Fiscal Year 1998 Annual Reports (De				
		•	Ocean, Atmosphere, and Space Fiscal Year 1999 Annual Reports (Dec. 1999)	
		F8 Ohara, K., M. Hennecke, and J. Fuhrmann, "Electrostriction of polymethylmethacrylates," Colloid & Polymer Sci. Vol 280, 164-16		
- 1	1997. "Valve-less Diffuser Micropumps Fabricated using Thermoplastic			
I	Replication," Proc. IEEE Micro Electro Mechanical Systems, Nagoya, Japan,			
pp. 305-310 (January 26-30, 1997). F10 Olsson, A., G. Stemme, and E. Stemme, "The First Valve-less Diffu				
			Pump," Tenth Annual International Workshop on Micro Electromechanical	
Systems, Nagova, Japan IEEE Proceedings (Japan)				
	Systems, Nagoya, Japan, <i>IEEE Proceedings</i> (January 26-30, 1997), pp.108 113.			
F11 Otero, T.F., J. Rodriguez, E. Angulo and C. Santamaria, "Artificial Musc				
	from Bilayer Structures," Synthetic Metals, Vol. 55-57, pp. 3713-3717 (1993). Otero, T.F., J. Rodriguez, and C. Santamaria, "Smart Muscle Under			
F12				
-	Electrochemical Control of Molecular Movement in Polypyrrole Films,"			
	Materials Research Society Symposium Proceedings, Vol. 330, pp. 333-338, 1994			
F13 Park, S.E., and T. Shrout., "Ultrahigh Strain and Piezoelectric Be				
	Relaxor Based Ferroelectric Single Crystals," J Applied Physics, Vol. 82, pp.			
	1804-1811, August 15, 1997			
	Date Considered			
	F3 F4 F5 F6 F7 F8 F9 F10 F11 F12			

All 9 2001 Statement By Applicant	Atty Docket No. SRI1P029 Applicant:	Application No.: 09/779,373	
se Several Sheets if Necessary)	Pelrine, et al. Filing Date 02/07/01	Group 2834	

Other Documents				
Examiner				
Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication		
	G1	Pei, Q., O. Inganäs, and I. Lundström, "Bending Bilayer Strips Built From		
		Polyaniline For Artificial Electrochemical Muscles," Smart Materials and		
		Structures, Vol.2, pp. 16., January 22, 1993		
	G2	Pei et al., "Improved Electroactive Polymers", U.S. Patent Application No.		
	<u> </u>	<u> 09/619,847, filed July 20, 2000, 70 pages</u>		
	G3	R. Pelrine and Kornbluh, R., and, 1995, "Dexterous Multiarticulated		
	1	Manipulator with Electrostrictive Polymer Artificial Muscle Actuator." EMU		
	_	193-023, SRI International, Menlo Park, California, April 28, 1995.		
	G4	Pelrine, R., R. Kornbluh, and Q. Pei. "Electroactive Polymer Transducers		
		And Actuators", U.S. Patent Application No. 09/620,025, filed July 20, 2001		
	ļ	58 pages.		
	G5	Pelrine, R. and Kornbluh, "Electroactive Polymer Devices", U.S. Patent		
		Application No. 09/619,846, filed July 20, 2000, 67 pages		
	G6	Pelrine et al., "Electroactive Polymer Electrodes", U.S. Patent Application		
No. 09/619,843, filed July 20, 2000, 54 pages		No. 09/619,843, filed July 20, 2000, 54 pages		
	G7 Pelrine et al., "Electroactive Polymer Fabrication", U.S. Patent Appl			
		No. 09/619,845, filed July 20, 2000, 55 pages Pelrine et al., "Electroactive Polymer Generators", U.S. Patent Application No. 09/619,848, filed July 20, 2000, 69 pages Pelrine, R., R. Kornbluh, and J. Joseph, "Electrostriction of Polymer Dielectrics with Compliant Electrodes as a Means of Actuation," Sensors and Actuators A: Physical, Vol. 64, 1998, pp.77-85.		
	G8			
	-			
	G9			
	010			
	G10 Pelrine, R, R. Kornbluh, J. Joseph, and S. Chiba, "Electrostriction of Pol			
		Films for Microactuators," Proc. IEEE Tenth Annual International Workshop		
- "	G11			
	911			
	G12	1 The state of the past of the state		
	012			
		Small Robots, ITAD-3393-FR-93-063, SRI International, Menlo Park, California, March 1993		
		Cantolina, Match 1773		
Examiner		Date Considered		
		Date Considered		



Other Documents

	,	Other Documents	
Examiner			
Initial	- Tubiculon		
	HI	Pelrine, R., and J. Joseph. 1994. FY 1993 Final Report on Artificial Muscle for Small Robots, ITAD-4570-FR-94-076, SRI International, Menlo Park, California.	
	H2	Pelrine, R., R. Kornbluh, and J. Joseph, FY 1994 Final Report on Artificial Muscle for Small Robots, ITAD-5782-FR-95-050, SRI International, Menlo Park, California, 1995	
	НЗ	Pelrine, R., R. Kornbluh, and J. Joseph, FY 1995 Final Report on Artificial Muscle for Small Robots, ITAD-7071 -FR-96-047, SRI International, Menlo Park, California, 1996	
	Н4	Pelrine, R., R. Kombluh, and J. Joseph, FY 1996 Final Report on Artificial Muscle for Small Robots, ITAD-7228-FR-97-058, SRI International, Menlo Park, California, 1997	
	Н5	Pelrine, R., R. Kornbluh, and J. Joseph, FY 1997 Final Report on Artificial Muscle for Small Robots, ITAD-1612-FR-98-041, SRI International, Menlo Park, California, 1998 Pelrine, R., R. Kornbluh, and J. Joseph, FY 1998 Final Report on Artificial Muscle for Small Robots, ITAD-3482-FR-99-36, SRI International, Menlo Park, California, 1999 Pelrine, R., R. Kornbluh, and J. Joseph, FY 1999 Final Report on Artificial Muscle for Small Robots, ITAD-10162-FR-00-27, SRI International, Menlo Park, California, 2000 Pelrine, R., R. Kornbluh, Q. Pei, and J. Joseph. "High-Speed Electrically Actuated Elastomers with Strain Greater Than 100%", Science, Reprint Series, Feb. 4 2000, Vol. 287, pp. 836-839. Pelrine, R., R. Kornbluh, Q. Pei, and J. Joseph, "High Speed Electrically Actuated Elastomers with Over 100% Strain," Science, Vol. 287, No. 5454, pages 1-21, 2000	
	Н6		
	Н7		
	Н8		
	H9		
	H10		
Examiner		Date Considered	

Form 1449 (Modified)

Information Disclosure **Statement By Applicant**

(Use Several Sheets if Necessary)

Atty Docket No. **SRI1P029**

Applicant: Pelrine, et al.

Filing Date 02/07/01

Application No.: 09/779,373

Group 2834

Other Documents				
Examiner				
Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication		
	I1	Pelrine, R., Roy Kornbluh, Jose Joseph, Oibing Pei, Seiki Chiba "Recent		
		Progress in Artificial Muscle Micro Actuators,", SRI International, Tokyo.		
		1999 MITI/NEEDOIMNIC, 1999		
	I2	Pelrine, R., J. Eckerle, and S. Chiba, "Review of Artificial Muscle		
		Approaches," invited paper, in Proc. Third International Symposium on Micro		
	+	Machine and Human Science, Nagoya, Japan, October 14-16, 1992		
	I3	Piezoflex TM PVDF Polymer Sensors, http://www.airmar.com/piezo/pvdf.htm ,		
 		106/06/2001.		
	I4	Scheinbeim, J., B. Newman, Z. Ma, and J. Lee, "Electrostrictive Response of		
	+	Elastomeric Polymers," ACS Polymer Preprints, 33(2), pp.385-386, 1992		
	I5	Schlaberg, H. I., and J. S. Duffy, "Piezoelectric Polymer Composite Arrays		
		For Ultrasonic Medical Imaging Applications," Sensors and Actuators, A 44,		
	16	pp. 111-117, February 22, 1994		
	16	Shahinpoor, M., "Micro-electro-mechanics of Ionic Polymer Gels as		
		Electrically Controllable Artificial Muscles," J. Intelligent Material Systems		
	17	and Structures, Vol. 6, pp. 307-314, May 1995		
	1/	Shkel, Y., and D. Klingenberg, "Material Parameters for Electrostriction," J		
	18	Applied Physics, Vol. 80(8), pp. 4566-4572, October 15, 1996		
	10	size Structures," Science, Vol. 268, pp. 1735-1738 (23 June 1995).		
	19			
	13	Smela, E., O. Inganäs, Q. Pei, and I. Lundström, "Electrochemical Muscles:		
		Micromachining Fingers and Corkscrews, "Advanced Materials, Vol.5, No. 9, pp.630-632, September 1993		
	110	Su, J., Q. M. Zhang, C. H. Kim, R. Y. Ting, and R. Capps, "Effects of		
	1.0	Transitional Phenomena on the Electric Field induced Strain-electrostrictive		
		Response of a Segmented Polyurethane Elastomer," pp. 1363-1370, January		
•		20, 1997.		
	I11	Su, J., Z. Ounaies, J. S. Harrison, Y. Bara-Cohen and S. Leary,		
		"Electromechanically Active Polymer Blends for Actuation," Proceedings of		
		Polymers and Devices (EAPAD) Conference, March 6-8, 2000, Newport Beach, California, USA, pp. 65-72.		
	I12	 Technology, http://www.micromuscle.com/html/technology.html, 06/06/2001. Tobushi, H., S. Hayashi, and S. Kojima, "Mechanical Properties of Shape Memory Polymer of Polyurethane Series," in <i>JSME International Journal</i>, Series I, Vol.35, No.3, 1992 		
	I13			
	I14	Treloar, L.R.G, "Mechanics of Rubber Elasticity." J Polymer Science.		
	Polymer Symposium, No. 48, pp. 107-123, 1974			
xaminer Date Considered				
				

Form 1449 (Modified) Information Disclosure Statement By Applicant	Atty Docket No. SRI1P029 Applicant: Pelrine, et al.	Application No.: 09/779,373
(Use Several Sheets if Necessary)	Filing Date 02/07/01	Group 2834

RK.	office.		Other D	ocuments	
1	Examiner Initial No. Author, Title Date P		Author Title Date Place	(o.g. Journal) of D. L	
J1 Uchino, K Ceramic B J2 Wade, W. Breakdown 34, No. 5, J3 Wax, S. G. Proceeding Materials:		, , , , , , , , , , , , , , , , , , , ,	(e.g. Journal) of Publication strictive Actuators: Materials and Applications,"		
		Wade, W. L., Jr., R. J. Mar Breakdown Strengths Of N 34, No. 5, pp. 1093-4 (199	mmone and M. Binder, "Increased Dielectric Melt-Extruded Polyporpylene Films," <i>Polymer</i> , Vol. 3).		
		Ј3	Wax, S. G. and R. R. Sand Proceedings of the SPIE In Materials: Electro-Active F Newport Beach, California	s, "Electroactive Polymer Actuators and Devices," iternational Symposium on Smart Structures and Polymer Actuators and Devices, March 1-2, 1999, USA., pp. 2-10.	
		J4	Winters, J., "Muscle as an Research: Trans. Robotics 21, 1986).	Actuator for Intelligent Robots", Robotics International of SME, Scottsdale, AZ (August 18 –	
	- <u> </u>	J5	1775	red", Scientific American, Vol. 273, pp. 82-87, July	
TrFE) Copolymers," Smart Structures and Devices, March 1-2, 1		TrFE) Copolymers," Proce Smart Structures and Mater Devices, March 1-2, 1999,	-Y. Cheng, TB. Xu, S. Wang, T. S. Ramotowski, tromechanical Behavior of Electroactive P(VDF-edings of the SPIE International Symposium on ials: Electro-Active Polymer Actuators and Newport Beach, California, USA., pp. 134-139.		
Ferroelectric Behavior in Electron-itrifluoroethylene) Copolymer," Scientifluoroethylene)			Ferroelectric Behavior in El trifluoroethylene) Copolym 1998).	Lectron-irradiated Poly(vinylidene fluoride- er," Science, Vol. 280, pp. 2101-2104 (26 June	
		Zhang, Q. M., ZY. Cheng, V. Bharti, TB. Xu, H. Xu, T. Mai, and S. J. Gross, "Piezoelectric And Electrostrictive Polymeric Actuator Materials," Proceedings of the 7th SPIE Symposium on Smart Structures and Materials-Electroactive Polymers and Devices (EAPAD) Conference, March 6-8, 2000, Newport Beach, California, USA, pp. 34-50.		Sectrostrictive Polymeric Actuator Materials," Symposium on Smart Structures and Materials- Devices (EAPAD) Conference, March 6 8, 2000	
			Zhenyi, M., J.I. Scheinbeim, J.W. Lee, and B.A. Newman. 1994. "High Field Electrostrictive Response of Polymers," Journal of Polymer Sciences, Part B-Polymer Physics, Vol.32, pp. 2721-2731, 1994		
E	xaminer			Date Considered	